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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,669	07/20/2001	Gregory S. Francis	920070.406	3153

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OFFICE OF THE STAFF JUDGE ADVOCATE  
U.S. ARMY MEDICAL RESEARCH AND MATERIEL COMMAND  
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FORT DETRICK, MD 21702-5012

EXAMINER

ZHOU, TING

ART UNIT PAPER NUMBER

2173

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/910,669	Applicant(s) FRANCIS ET AL.	
	Examiner Ting Zhou	Art Unit 2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-17 and 19-26 is/are rejected.
- 7) ☒ Claim(s) 9, 18 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/28/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The amendment filed on 1 July 2004 have been received and entered. Claims 1-27 are pending in the application.

#### ***Allowable Subject Matter***

2. Claims 9, 18 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. The following is a statement of reasons for the indication of allowable subject matter: Claims 9, 18 and 27 each identify the distinct feature of “assigning at least one label of the labeled at least two buttons among the two or more buttons on the one or more displayed pages on the basis of an optimization procedure selected from an optimization-procedure group including a gradient descent substantial optimization procedure and a simulated annealing substantial optimization procedure”. The closest prior art, Wagner et al. U.S. Patent 6,002,395, teaches a method of building a graphical user interface via substantially optimizing the screen premium. The prior art fails to teach an optimization procedure selected from an optimization-procedure group including a gradient descent substantial optimization procedure and a simulated annealing substantial optimization procedure and thus fails to anticipate or render the above limitations obvious.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-5, 10-14 and 19-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Wagner et al. U.S. Patent 6,002,395.

Referring to claims 1, 10 and 19, Wagner et al. teach a method and system comprising means and circuitry (the developmental computing system comprising a processor, memory, and display taught in the Wagner et al. reference comprises circuitry) (column 3, lines 18-30) for accepting user input specifying a geometrical arrangement of two or more buttons on one or more displayed pages (using the GUI builder to specify a placement of buttons such as “PIZZAS”, “SANDWICHES”, “COFFEE”, etc. in the sample pizza shop application shown in Figure 2A, which is an example of the reference’s teachings) (column 2, lines 21-28, column 3, lines 45-52 and column 4, lines 36-53), means and circuitry for accepting user input labeling at

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least two of the two or more buttons on the one or more displayed pages (naming the titles of the buttons shown in Figure 2A; for example, assigning the name “SPECIAL DELUX” to button represented by reference number “211-3”) (column 4, lines 37-46 and further shown Figures 3A-3C, which show controls representing the position and name of the desired button on the GUI), means and circuitry for accepting user input defining at least one interaction between the labeled at least two buttons (relationships between buttons, for example, pressing the “BEER” button in Figure 2A deletes and replaces the buttons in the “DRINK” screen) (column 4, lines 54-62), means and circuitry for accepting user input specifying at least one constraint cost for the defined at least one interaction (parent child relationship between screens and buttons; for example, it can be seen that the buttons “PIZZAS”, “SPECIAL PEPPERONI”, “SPECIAL DELUX” and “SPECIAL VEGGIE” would need to be placed together under the “PIZZA” category in Figure 2A) (column 4, lines 11-21 and 36-47), and means and circuitry for assigning labels of the at least two buttons among the two or more buttons on one or more displayed pages such that the at least one constraint cost is substantially optimized (controls shown in Figures 3A-3C associated with each button shown in Figures 2A-2D; for example, in order to optimize screen space, related items such as “PIZZAS”, “SPECIAL PEPPERONI”, “SPECIAL DELUX” and “SPECIAL VEGGIE” would be labeled and placed together under the “PIZZA” category; as another example, arranging the multiple screens for the touch screen display in order to optimize parent/child relationships and interactions of buttons and screen space so that when the “Beer” button is pressed, only the “Drinks” screen need to be deleted and replaced) (column 4, lines 1-62 and column 13, lines 32-67 and Figure 4). This is further recited in column 17, lines 1-10, column 26, lines 5-35 and shown in Figures 5B and 5C, where logic is given to modify and move buttons and screens according to their relationships.

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Referring to claims 2, 11 and 20, teaches accepting user input specifying one or more sizes of the one or more displayed pages, as recited in column 17, lines 1-10.

Referring to claims 3, 12 and 21, teaches accepting user input specifying two or more locations (positions) of the two or more buttons on the one or more displayed pages, as recited in column 8, lines 61-67 and column 9, lines 1-4 and lines 34-52.

Referring to claims 4, 13 and 22, teaches accepting user input labeling (naming) at least two buttons on a first displayed page presented to the user, as recited in column 4, lines 11-21 and column 24, lines 16-24.

Referring to claims 5, 14 and 23, teaches accepting user input labeling at least one button on a first displayed page presented to the user and accepting user input labeling at least one button on a second displayed page presented to the user (for example, labeling the button “211-2” as “SPECIAL PEPPERONI” in Figure 2A on the first displayed screen, and the button “231-7” as “INDIVIDUAL PAN” in Figure 2D on a subsequently displayed screen) (column 4, lines 11-21 and column 24, lines 16-24).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-7, 15-16 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. U.S. Patent 6,002,395, as applied to claims 1, 10 and 19 above, and further in view of Ikemoto U.S. Patent 5,969,717.

Referring to claims 6, 15 and 24, while Wagner et al. teach all of the limitations as applied to the claims above, they fail to explicitly teach accepting user input identifying at least one relationship between the labeled at least two buttons selected from a group including a Fitt's movement interaction, a Euclidean-distance interaction, a city-block distance interaction, an x-directed interaction and a y-directed interaction. Ikemoto teaches a method for specifying an arrangement of at least two buttons in building a GUI (column 2, lines 32-46 and further shown in Figure 1) similar to that of Wagner et al. In addition, Ikemoto further teaches identifying the relationship between buttons including a position and distance interaction of the buttons (x-directed distance between components and y-directed distance between components) (column 6, lines 56-59, column 7, lines 1-7 and column 10, lines 29-44). Fitt's movement interaction, Euclidean-distance interaction, a city-block distance interaction, a x-directed interaction and y-directed interaction are all distance related relationships and therefore, could be included in the group of relationships defined between the labeled buttons. It would have been obvious to one of ordinary skill in the art, having the teachings of Wagner et al. and Ikemoto before him at the time the invention was made, to modify the GUI building method of Wagner et al. to include the use of distance related metrics to define relationships between GUI components, as taught by Ikemoto. One would have been motivated to make such a combination in order to create an efficient interactive process between the user and the GUI builder program; by allowing the users to specifying exactly the distance between each and every component on the display screen, users will be able to create an interface customized to their preferences and needs.

Referring to claims 7, 16 and 25, while Wagner et al. teach all of the limitations as applied to the claims above, they fail to explicitly teach specifying at least one constraint cost for the at least one interaction selected from a group including a global-difficulty cost, a pages-to-close-buttons cost, a pages-to-fixed buttons cost, a path-difficulty cost, a pages-to-far buttons cost, and a parent-to-child variability cost. Ikemoto teaches a method for specifying a relationship and interaction between components of a GUI (column 13, lines 25-42 and further shown in Figures 12 and 14) similar to that of Wagner et al. In addition, Ikemoto further teaches identifying the constraint cost for the interaction of components including a pages-to-far buttons cost and a parent-child variability cost (components that are unrelated to each other are placed in separate areas on the display screen and a consistent hierarchical parent-child display of components) (column 13, lines 25-42 and further shown in Figures 12, 15A and 21). Global-difficulty cost, a pages-to-close-buttons cost, a pages-to-fixed buttons cost, a path-difficulty cost, a pages-to-far buttons cost, and a parent-to-child variability cost are all types of interaction relationships between components and therefore, could be included in the group of constraint cost relationships between GUI components. It would have been obvious to one of ordinary skill in the art, having the teachings of Wagner et al. and Ikemoto before him at the time the invention was made, to modify the GUI building method of Wagner et al. to include the use of constraint costs for the interaction of GUI components, as taught by Ikemoto. One would have been motivated to make such a combination in order to create an efficient interactive process between the user and the GUI builder program; by allowing the users to specifying exactly what factors and relationships are the most important in placing components on the display screen, users will be able to create an interface customized to their preferences and needs.



6. Claims 8, 17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. U.S. Patent 6,002,395, as applied to claims 1, 10 and 19 above, and further in view of Shimogori U.S. Patent 5,973,686.

Referring to claims 8, 17 and 26, while Wagner et al. teach all of the limitations as applied to the claims above, they fail to teach accepting user input specifying at least one weighting factor to be associated with the specified at least one constraint cost. Shimogori teaches creating display parts (such as buttons) for a GUI and rules for governing the conversion of display parts similar to the relabeling of buttons according to costs of Wagner et al. In addition, Shimogori further teaches at least one weighting factor (weight information) associated with the specified at least one cost (rules), as recited in column 2, lines 17-29 and column 14, lines 51-60. It would have been obvious to one of ordinary skill in the art, having the teachings of Wagner et al. and Shimogori before him at the time the invention was made, to modify the GUI builder method and system taught by Wagner et al. to include the weighting factor of Shimogori. It would have been advantageous for one to utilize such a combination in order to allow users to define priorities and rank the rules in order of their importance when creating a GUI, ensuring more user satisfaction with the GUI's look and operations.

### ***Response to Arguments***

7. Applicant's arguments filed on 1 July 2004 have been fully considered but they are not persuasive.

8. Applicant asserts that Wagner fails to disclose a method including, "assigning the labels of the at least two buttons among the two or more buttons on one or more displayed pages such

that the at least one constraint cost is substantially optimized”. The examiner respectfully disagrees. Wagner teaches a method of building a graphical touch screen interface that optimizes screen premium. Wagner further teaches assigning parent/child relationships to objects, such as the Pizza unit 211 having four child button objects 211-1, 211-2, 211-3 and 211-4, shown in Figure 4. It is noted that in the specification of the present application, on page 23, lines 45-56, the parent/child relationship of buttons is defined as one type of constraint cost under “parent to child variability”. Wagner teaches displaying buttons within the same unit together on the touch screen display so that for example, the four children pizza buttons are displayed together under the parent “Pizza” screen, the eight children drinks buttons are displayed together under the parent “Drinks” screen, etc., as shown in Figure 4 and recited in column 4, lines 11-62. Furthermore, the multiple screens are displayed together so that pressing of a button causes only part of the display to be destroyed; as an example, if the “Beer” button is pressed, then only the children buttons under the parent “Drinks” screen 202 need to be deleted and replaced while the other three screens 201, 203 and 204 remain, as shown in Figure 4 and recited in column 4, lines 48-62. Therefore, by positioning and labeling related buttons together on the touch screen, the parent child relationships of the buttons on the screen and the premium of screen space are substantially improved. This shows an inherent optimization of parent/child relationships of assigned buttons within the constraints of the “Drinks” menu.

9. Referring to the combination of Wagner and Ikemoto for dependent claims 6-7, 15-16 and 24-25, the applicant asserts that there is no teaching or suggestion of “assigning the labels of the at least two buttons among the two or more buttons on one or more displayed pages such that the at least one constraint cost is substantially optimized”, as recited in the independent claims

from which these dependent claims depend. The examiner respectfully disagrees. Wagner's teaching of this limitation is cited above.

10. Referring to the combination of Wagner and Shimogori for dependent claims 8, 17 and 26, the applicant asserts that there is no teaching or suggestion of "assigning the labels of the at least two buttons among the two or more buttons on one or more displayed pages such that the at least one constraint cost is substantially optimized", as recited in the independent claims from which these dependent claims depend. The examiner respectfully disagrees. Wagner's teaching of this limitation is cited above.

11. Therefore, it can be seen that Wagner and combinations of Wagner and Ikemoto, and Wagner and Shimogori anticipate the limitations of the subject invention.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

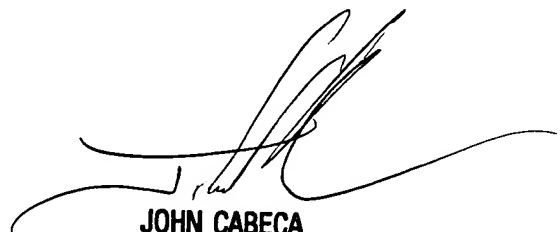
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ting Zhou whose telephone number is (571) 272-4058. The examiner can normally be reached on Monday - Friday 8:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached at (571) 272-4048. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-4058.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

30 November 2004



**JOHN CABECA**  
**SUPERVISORY PATENT EXAMINER**  
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